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BRACHIOPODA

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E. F. OWEN

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I.—TITLES

NOTE.—The system of numbering all papers in each part of the Zoological Record has now been dropped. In this part numbers are only given (in parentheses) to papers in excess of one by a particular author.

The year of publication is omitted where it is the same as the volume year of the "Record", namely (1958).

[Abramyan, M. S.] [Brachiopods of the Upper Frasnian and Etroeungt deposits of S.W. Armenia.] Publ. Acad. Sci. Armenia SSR. Inst. Geol. Sci. Erevan 1957: 1-142, pl. 1-16 figs.

Abrahamian, M. S. *see* Abramyan, M. S.

Ager, D. V. A monograph of the British Liassic Rhynchonellidae. Part II. Palaeontogr. Soc. [Monogr.]: 51-84 3 pls. 21 text-figs.

[Alikhova, T. N.] [On the problem of dividing the Ordovician system.] Soviet Geol. Moscow 55 1957: 93-113 (brachiopods mentioned).

Almela, A. & Revilla, J. de la. Fósiles piritosos del Cretácico de la Sierra de Ricote (Murcia). Bol. Inst. geol. Esp. 68 1957: 45-83 11 pls.

Almela, A. & Sanz, R. Resumen de la historia geológica de la Tierra.

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Mem. Inst. Geol. Esp. 59: 1-174 81 pls. (brachiopods mentioned and figd.).

Amos, A. J. Algunos Spiriferacea y Terebratulacea (Brach.) del carbonífero superior del "Sistema del Tepuel". (Provincia de Chubut). Contr. Cient. Fac. Cien. Exact. Nat. Univ. Buenos Aires. Ser. Geol. 2: 95-108 2 pls.

Amos, A. J. (1). Some Lower Carboniferous brachiopods from the Volcan formation, San Juan, Argentina. J. Paleont. 32: 838-845 2 pls. figs.

Amsden, T. W. Stratigraphy and Paleontology of the Hunton Group in the Arbuckle Mountain region. Part II. Haragan articulate brachiopods. Bull. Oklahoma Geol. Surv. 78: 1-144 pls. 1-10 38 figs.

Amsden, T. W. (1). Stratigraphy and Paleontology of the Hunton Group in the Arbuckle Mountain region. Part III. Supplement to the Henryhouse brachiopods. Bull. Oklahoma Geol. Surv. 78: 145-157 2 pls. 1 fig.

Amsden, T. W. (2). Stratigraphy and Paleontology of the Hunton Group in the Arbuckle Mountain region. Part V. Bois D'Arc articulate brachiopods. Bull. Oklahoma Geol. Surv. 82: 1-110 5 pls. 18 figs.

Amsden, T. W. *see* Boucot, A. J.

Ancellin, J. Observations sur la faune et les fonds de pêche de quelques secteurs de la manche et des mers nordiques. *Rev. Trav. Inst. Pêches marit.* **21** (4) 1957 : 449-484 (brachiopods mentioned).

Anderson, F. M. Upper Cretaceous of the Pacific Coast. *Mem. geol. Soc. Amer.* **71** : [12] 1-378 75 pls.

Atkins, D. A new species and genus of Kraussinidae (Brachiopoda) with a note on feeding. *Proc. zool. Soc. London* **131** : 559-581 1 pl. 14 figs.

[Averianov, V. I.] [Kynov deposits in the North-East of Tartara.] *C.R. Acad. Sci. URSS* **118** 3 : 549-552 fig. (brachiopods mentioned).

Awati, P. R. & Kshirsagar, G. R. *Lingula* (from the Western Coast of India). *Zool. Mem. Univ. Bombay* No. 4 [1957] : + viii, 87 text-figs. and table.

Barthel, K. W. Eine marine Fauna aus der mittleren Trias von Chile. *Neues Jb. Geol. Paläont. Abh.* **106** 3 : 352-382 2 pls. figs. (brachiopods mentioned.)

[Beznosova, G. A.] [First representative of the genus *Tenticospirifer* Tien in the Lower Carboniferous, Kuznetz basin.] *Mat. Osnov. Pal. Akad. Nauk SSSR* **2** : 13-16 figs.

[Beznosova, G. A.] (1). [New subfamily *Hunanospiriferinae* for the family *Cyrtospiriferidae*.] *Mat. Osnov. Pal. Akad. Nauk SSSR* **2** : 17-20 1 pl.

[Bogomazov, V. M.] [Volcanogenic facies in the coal-bearing Carboniferous of the Northern region of the Balkasa area.] *C.R. Acad. Sci. URSS* **118** 1 : 153-155 (brachiopods mentioned).

Bolton, T. E. Silurian stratigraphy and paleontology of the Niagara escarpment in Ontario. *Mem. geol. Surv. Can.* **289** 1957 : 1-145 13 pls.

Boucot, A. J. A Devonian brachiopod, *Cyrtinopsis*, redescribed. *Senckenbergiana leth.* **38** 1957 : 37-48 2 pls. 1 text-fig.

Boucot, A. J. and others. Metamorphosed Middle Paleozoic fossils

from Central Massachusetts, Eastern Vermont, and Western New Hampshire. *Bull. geol. Soc. Amer.* **69** 7 : 855-870 6 pls. fig.

Boucot, A. J. & Amsden, T. W. Stratigraphy and Paleontology of the Hunton Group in the Arbuckle Mountain region. Part IV. New genera of brachiopods. *Bull. Oklahoma Geol. Surv.* **78** : 159-170 1 pl. 6 figs.

Boucot, A. J. & Gill, E. D. *Australocoelia*, a new Lower Devonian brachiopod from South Africa, South America, and Australia. *J. Paleont.* **30** 1956 : 1173-78 1 pl. 1 fig.

[Bublichenko, N. L.] [Some New Representatives of Devonian and Carboniferous Brachiopods from Rudno-Alta and Sary-Arka.] *Izvest. Akad. Nauk Kazakhskoi SSR.* 1956 Ser. geol. (23) : 93-104 (from private translation).

Carlsson, J. G. Le genre *Crania* du Terrain Crétacé de la Suède. *Lunds Univ. Arsskrift N.F. Avd. 2.* **54** 8 : 1-36 3 pls.

Castell, J. D. & de la Concha, D. S. Mapa geológico de España-Escala 1 : 50,000. Explicación de la Hoja No. 434. Barahona (Guadalajara-Soria). *Mapa geol. España* **67** H 1956 : 1-34 figs.

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Chekhovich, V. D. see Solovyeva, M. N.

Chuang, S. H. The ciliary feeding mechanisms of *Lingula unguis* (L.). (Brachiopoda). *Proc. zool. Soc. Lond.* **127** 1956 : 167-190 f. 1-11.

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Crickmay, C. H. Elucidation of some Western Canada Devonian formations 1957 : 1-16 1 pl. 8° Calgary, Canada.

Cvancara, A. M. Invertebrate fossils from the Lower Carboniferous of New South Wales. *J. Paleont.* **32** : 846-888 5 pls. figs.

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[Grigoriev, V. N.] [A new fauna in the north-west of the Siberian platform with reference to the subdivision of the Lower Cambrian of the Igoska region]. *C.R. Acad. Sci. URSS* **119** 1 : 137-139 (brachiopods mentioned).

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[Kozubova, L. A. & Kulikov, M. V.] [New data concerning the Permian deposits of west Transbaikalia.] *C.R. Acad. Sci. URSS* **121** 4 : 712-715 fig. (brachiopods mentioned).

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Kulikov, M. V. *see* Kozubova, L. A.

Kureeva, G. D. *see* Semikhatova, S. V.

[Lapina, N. H.] [Some discoveries about the Upper Palaeozoic brachiopod fauna from the Western part of the Kharaulakhskikh Mountains.] *Sbornik Statei Pal. Biostrat. Inst. Gheol. Arktiki* **8** : 21-30 2 pls.

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[Makridin, V. P.] [On the question of the ecology, geographical and stratigraphical distribution of the brachiopods from the Devonian of the Russian platform.] Vopros. Paleobiog. Biostrat. Trudui **1** Vses. Pal. Obs. 1957 : 158-162 figs. (brachiopods mentioned).

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Meijer, M. see Kruytzer, E. M.

Miller, A. K. see Easton, W. A., Sanders, J. E. & Brookes Knight, J.

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[Raznitsin, V. A.] [On the boundary between the Devonian and Carboniferous in the Southern Timan.] Bull. Soc. Nat. Moscow Geol. **33** (2) : 156-157 (brachiopods mentioned).

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Tokuyama, A. On some terebratuloids from the Middle Jurassic Naradani formation in Shikoku, Japan. Jap. J. Geol. Geogr. 29 : 1-10 1 pl. figs.

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Vai, A. see Vialli, G. S.

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II.—SUBJECT INDEX

Reference to the "Titles" is by the name(s) of the Author(s).

General.—Biometrical analysis and variation study of *Goniorhynchia boueti*, Normandy and Dorset, Mitra; Brachiopod zonal scheme for Carboniferous Canada, Nelson.

Classification. — Note on classification of Thecidian brachiopods Trias—Recent, Elliott.

STRUCTURE and ANATOMY

Anatomy and Physiology.—Chemical tests showing presence of chitin in pedicle cuticle of articulateles, Hyman; Ciliary feeding mechanism in *Lingula*, Chuang; Ciliary feeding mechanism of *Pumilus* gen. nov., Atkins; Anatomy, circulatory and nervous systems and sense and reproduction system of *Lingula*, Awati & Kshirsagar; Spermiogenesis and fertilization, Franzen.

Transverse sections. — Ur. Devonian Armenian brachiopods, Abramyan; Middle Devonian, Eifel, Germany, Boucot; Liassic rhynchonellids, Ager; Middle Jurassic Japan, Tokuyama; Lr. Permian Japan, Minato (1); Permian, Western Australia, Thomas.

ECOLOGY

Palaeoecology Devonian brachiopods, U.S.S.R., Makridin.

Geographical distribution. — New record of *Stringocephalus* Devonian Morocco, Hollard & Drot; First record of Oldhaminids in Permian of Australia, Thomas (1).

DISTRIBUTION

Cambrian. — Greenland, Poulsen; Norway (Ur.), Henningsmoen; Spitzbergen, Hallam; (Lr.) Russia.

Ordovician. — U.S.S.R., Alikhova; Esthonia, Oraspyl'd; England, Dean; U.S.A., Fisher; (Lr.) U.S.A., Sando.

Silurian. — U.S.S.R., Solovyeva & Chekhovich; U.S.S.R., Kaplun & Rukavishnikova; U.S.S.R., Rzonnikaja; U.S.S.R., Makarychev; Poland, Tomezykowa; Canada, Bolton; (Ur.) U.S.A., Amsden; (Lr.), U.S.A., Boucot & Amsden.

Devonian. — (Lr.) U.S.S.R., Predchensky; U.S.S.R., Raznitsen; U.S.S.R., Makridin; Beznosova (1); (Ur.) U.S.S.R., Averianov; U.S.S.R., Maimin; U.S.S.R., Kaplun & Rukavishnikova; (Ur.) Armenia, Abramyan; (Lr.) Germany, Lehmann; (Mid.) Germany, Boucot; (Mid.), Germany, Steiner; Germany, Simon; Falke; (Lr.) Germany, Röder; (Mid.) Germany, Jentsch & Röder; Belgium, Vandercammen; Vandercammen (1); Vandercammen (2); Vandercammen (3); (Ur.) Germany, Vandercammen; Spain, Castell & de la Concha; (Mid.) Sahara, Villemur & Drot; (Ur.) Morocco, Hollard & Drot; (Lr.) South Africa, Boucot & Gill; (Lr.) South America, Boucot & Gill; Canada, Crickmay; (Mid.) Canada, Stumm & Wright; (Lr.) U.S.A., Amsden; (Lr.) U.S.A., Amsden (2); (Lr.) U.S.A.; Boucot & Amsden; (Lr.) U.S.A., Boucot and others; (Lr.) Tasmania, Boucot & Gill; China, Chang; Japan, Yabe; (Mid.), Japan, Okubo.

Carboniferous. — Spitzbergen, Forbes, Harland & Hughes; U.S.S.R., Kashirtzev; (Lr.) U.S.S.R., Beznosova; U.S.S.R., Sergeev; (Lr.) U.S.S.R., Maksimova & Rostovtzeva; (Mid.) U.S.S.R., Semikhatova & Kureeva; U.S.S.R., Bogmazov; (Lr.) U.S.S.R., Dedok; (Lr.) U.S.S.R., Semikhatova; (Lr.) U.S.S.R., Semikhatova (1); (Lr.) U.S.S.R., Tikhomirova; (Ur.) U.S.S.R., Stepanov; (Lr.) U.S.S.R., Eliseev; (Lr.) U.S.S.R., Bublichenko; (Lr.) Poland, Zakowa; (Lr.) Belgium, Demanet; (Lr.) England, Jackson; (Lr.) British Isles, George; (Lr.) General, Dunlop; (Lr.) England, Wolfenden; (Lr.) Eire, Nevill; (Mis-

sissip.) Canada, **Nelson**; (Pensylv.) U.S.A., **Lintz**; (Ur.) U.S.A., **Wanless**; (Mississip.), **Sanders**; (Mississip.) U.S.A., **Easton et al.**; (Mississip.) U.S.A., **Lintz & Lohr**; (Lr.) Mexico, **Easton et al.**; (Lr.) Argentina, **Amos** (1); (Ur.) Argentina, **Amos**; (Lr.) Sahara, **Fabre & Greber**; (Ur.) Japan, **Minato**; (Lr.) Australia, **Cvancara**.

Permian. — Spitzbergen, **Forbes**, **Harland & Hughes**; (Lr.) U.S.S.R., **Kashirtzev**; U.S.S.R., **Kozubova & Kulikov**; (Lr.) U.S.S.R., **Solomina**; U.S.S.R., **Tilman**; (Lr.) U.S.S.R., **Sluisareva**; (Ur.) Jugoslavia, **Ramovš**; Germany, **Malzahn**; (Mid.) Japan, **Hyasaka & Minato**; (Lr.) Japan, **Minato** (1); (Mid.) Japan, **Minato & Nakamara**; (Lr. and Mid.) Australia, **Thomas**; Australia (Western), **Thomas** (1).

Trias.—Alpine (Italy, **Vialli & Vai**; Spain, **Castell & de la Concha** (1); (Mid.) Chile, **Barthel**.

Jurassic. — (Lias), U.S.S.R., **Nutzubilze**; Germany, **Hölder**; (Lias) Spain, **Castell & de la Concha** (1); (Lias), Spain, **Rios et al.**; (Mid.) Normandy, **Mitra**; (Lias) England, **Ager**; (Mid.) England, **Mitra**; (Mid.) Japan, **Tokuyama**; (Ur.) Japan, **Tokuyama** (1).

Cretaceous. — (Lr.) U.S.S.R., **Eristavi**; (Lr.) U.S.S.R., **Zesashvili**; (Ur.) Denmark, **Krøytzer & Meijer**; (Lr.) Spain, **Almela & Revilla**; (Ur.) U.S.A., **Anderson**.

Tertiary. — Germany, **Sieber**; (Cainozoic) South Australia, **Reynolds**.

Eocene.—Europe, **Davis & Elliott**.

Miocene. — U.S.S.R. (Georgia), **Kharatishvili**; Portugal, **Zbyszewski**.

Pleistocene.—Japan, **Ozaki**.

Recent.—Far East U.S.S.R., **Konzhukova**; Europe, **Elliott**; Channel and North Sea, **Ancellin**; Japan, **Yamada**.

In view of the very varied state of revision of the different groups and to avoid certain inconsistencies, no subdivision is attempted here below the level of superfamilies.

Generic and family names are arranged in alphabetical order within each superfamily.

Reference to the "Titles" is by the name(s) of the Author(s).

† Denotes genus extinct.

CLASS INARTICULATA

Order ATREMATA

OBOLACEA

†*Obolus* sp. p. 73. Cambrian, Spitzbergen, **Hallam**.

LINGULACEA

†*Lingula anatina* p. 111, Miocene, Portugal, **Zbyszewski**; *tenuis* p. 266, **Davis & Elliott**; *tenuissima* p. 43, **Vialli & Vai**.

Lingula unguis figd., **Chuang**; geographical distribution, anatomy, etc., **Awati & Kshirsagar**.

Order NEOTREMATA

DISCINACEA

†*Discina discoides* p. 43, **Vialli & Vai**.

†*Disciniscia ferroviae* p. 266, **Davis & Elliott**; *lamellosa* p. 110, chemical test of shell, **Hyman**.

CRANIACEA

Crania anomala p. 110, chemical test of shell fragment, **Hyman**.

†*Crania brattenburgica* p. 135, *brattenburgica geulhemensis* subsp. nov. Ur. Chalk, Denmark, **Krøytzer & Meijer**; *bromelli* p. 8, *quadrangularis* p. 9, *retzii* p. 10, *pyramidata* p. 11, *mulleri comosa* p. 12, *suessi* p. 13, *stobaei* p. 14, *excavata* p. 16, *parisiensis* p. 17, *tubulosa* p. 19, *spinulosa* p. 20, *craniolaris* p. 21, *craniolaris antiqua* p. 22, *egnabergensis* p. 24, *brattenburgicus* p. 27, all figd., Ur. Cretaceous, Sweden, **Carlsson**.

CLASS ARTICULATA

Suborder ORTHOIDEA

KUTORGINACEA

†*Kutorgina reticulata* p. 9, figd., **Poulsen**.

III.—SYSTEMATIC INDEX

NOTE.—The classification used here is according to H. M. Muir-Wood, 1955, with minor later amendments.

ORTHACEA

†*Anomalorthis* ? cf. *vermontensis* p. 853 figd., Lr. Ordovician, U.S.A., Sando.

†*Archaeorthis groenlandica* p. 73, Cambrian, Spitzbergen, Hallam.

†*Dolerorthis duftonensis* p. 199, figd. Ordovician, Great Britain, Dean.

†*Eoorthis* ? spp. p. 188, Henningsmoen.

†*Hesperorthis rae* sp. nov. p. 48 figd., Ordovician, Esthonia, Oraspyl'd.

†*Hebertella radiata* sp. nov., p. 100, Silurian, U.S.S.R., Makarychev.

†*Nicolella alliku* p. 46, *patens* p. 47 spp. nov. figd., Ordovician, Esthonia, Oraspyl'd.

†*Orthostrophia* p. 148, genus discussed, Amsden (1); *O. strophomenoides* p. 46, figd., Amsden (2).

†*Orusia lenticularis* p. 187, Henningsmoen.

†*Platystrophia biforata*, *daytonensis*, *daytonensis laurelensis* p. 61, Bolton; *P. dentata* var. *trapezoidalis* p. 43, *dentata* var. *triata* var. nov. p. 45, *dentata* var. *dentatoides* [Männil MS.], *dentata* var. *evari* p. 44, var. *rava* p. 46 [Männil MS.], Ordovician, Esthonia, Oraspyl'd.

†*Skenidioides henryhousensis* sp. nov. p. 149, figd., Ur. Silurian, U.S.A., Amsden (1).

†*Skenidium insigne* p. 45, figd., Amsden.

Suborder DALMANELLOIDEA

DALMANELLACEA

†*Aulacophoria keyserlingiana* p. 66, figd., Zakowa.

†*Bancroftina typa* p. 206 figd., Ordovician, Great Britain, Dean.

†*Cryptothyris paracyclica* 210, figd., Ordovician, Great Britain, Dean.

†*Dalmanella indica*, *horderleyensis*, *lepta* p. 206 figd., *unguis*, *wattsi* p. 208 figd., Ordovician, Great Britain, Dean.

†*Dicoelosia varica* p. 51 figd., Amsden; *D. varica* p. 50, figd., Amsden (2).

†*Harknessella subquadrata*, *subplicata* p. 197, *vespertilio* p. 197 figd., Ordovician, Great Britain, Dean.

†*Horderleyella plicata* p. 197 figd., Ordovician, Great Britain, Dean.

†*Isothis pygmaea* p. 62 figd., Amsden; *I. pygmaea* p. 51 figd., Amsden (2).

†*Levenea subcarinata pumilis* subsp. nov. p. 46 figd., Lr. Devonian, U.S.A., Amsden; *L. subcarinata pumilis* p. 47 figd., Amsden (2).

†*Loganella* gen. nov. p. 164 figd., type species *Rhipidomella lehutquetiana* Clarke, Lr. Devonian, U.S.A., Boucot & Amsden.

†*Onniella reuschi* p. 208, *inconstans*, *broeggeri* p. 213 all figd., Ordovician, Great Britain, Dean.

†*Orthotichia incisiva* p. 487, cf. *janiceps*, p. 488, Ramovš.

†*Perditocardinia* cf. *dubia* p. 42 figd., Sanders.

†*Platyorthis angusta* sp. nov. p. 51, figd., Lr. Devonian, U.S.A., Amsden (2).

†*Pseudodicoelosia* gen. nov. p. 162 figd., type species: *Rhipidomella oklahomensis* Amsden, Ur. Silurian, U.S.A., Boucot & Amsden.

†*Resserella brownsportensis* p. 148, Amsden (1).

†*Reuschella horderleyensis* p. 203 figd., Ordovician, Great Britain, Dean.

†*Rhipidomella fortimuscula* sp. nov. p. 853 figd., Lr. Carboniferous, New South Wales, Australia, Cvancara; *R. michelini* p. 65 figd., Zakowa; *R. cf. missouriensis* p. 42 figd., Sanders.

†*Rhipidomelloides* gen. nov. p. 165 figd., type species: *Rhipidomella henryhousensis* Amsden. Ur. Silurian—Lr. Devonian, U.S.A., Boucot & Amsden; *R. oblata* p. 55 figd., *henryhousensis* p. 61, Amsden; *R. oblata* p. 48 figd., Amsden (2).

†*Schizophoria indica* p. 487, Ramovš.

S. sulcata sp. nov. p. 43, figd., Mississippian, U.S.A., Sanders; *S. verulamensis* sp. nov. p. 856 figd., Lr. Carboniferous, New South Wales, Australia, Cvancara.

Suborder SYNTROPHIOIDEA

SYNTROPHIACEA

†*Anastrophia grossa* sp. nov. p. 65 figd., Lr. Devonian, U.S.A., Amsden; *A. grossa* p. 53 figd., Amsden (2).

†*Camerella dura* sp. nov. p. 62 figd., Ordovician, Esthonia, Oraspyl'd; *C. wiartonenensis* sp. nov. p. 68 figd., Silurian, Ontario, Canada, Bolton.

†*Cliftonia persculpta* p. 203, Dean.

Suborder PENTAMEROIDEA

PENTAMERACEA

Clorindinae subfam. nov. of Pentameridae for *Clorinda* p. 49. Llandovery and Devonian, Europe, Asia, Australia, N. America, Rzonnickaja.

†*Gypidula multicostata*? p. 69 figd., Amsden. *G. sp.* p. 54 figd., Amsden (2).

†*Gipidulina* gen. nov. p. 49 type *Pentamerus optatus* Barrande text-fig. 5 p. 50, Lr. Devonian, Central Asia, Urals and W. Europe, Rzonnickaja.

Suborder STROPHOMENOIDEA

PLECTAMBONITACEA

†*Plectodonta petila* sp. nov. p. 93 figd., Amsden.

†*Sampo* sp. p. 211, 212, Ordovician (Actonian stage), Great Britain, Dean.

STROPHOMENACEA

†*Actinomena asmusi* p. 57, *occidens* [Männil MS.] p. 59, both figd., Ordovician, Esthonia, Oraspyl'd.

†*Fardenia plicata* sp. nov. p. 70 figd., Silurian, Ontario, Canada, Bolton.

†*Kjaerina geniculata hedstroemi* p. 205, *bipartita* p. 205 figd., *typa* p. 207 figd., Ordovician, Great Britain, Dean.

†*Kjerulfina polycyma* p. 208, Dean.

†*Leptaena acuticuspidata* sp. nov. p. 83 figd., Lr. Devonian, U.S.A., Amsden; *L. alliku* p. 50 [Männil MS.], *taxilla* p. 51 [Männil MS.], *rugosoides* [Männil MS.] p. 52, *cryptoides* p. 54 [Männil MS.], *fluvialilis* p. 54 [Männil MS.], *luhi* p. 55,

all figd., Ordovician, Esthonia, Oraspyl'd; *L. cooperi* sp. nov. p. 45 figd., Mississippian, U.S.A., Sanders; *L. oklahomensis* p. 151 figd., Amsden (1); *L. ?* cf. "*rhomboidalis*" p. 861 figd., Boucot & others; *L. cf. rhomboidalis* p. 62 figd., *acuticuspidata* p. 66, Amsden (2).

†*Leptaenisca concava* p. 80 figd., Amsden; *L. concava* p. 61 figd., Amsden (2).

†*Leptagonia cf. analoga* p. 860 figd., Cvacara.

†*Leptostrophia becki tennesseensis* p. 78 figd., Amsden; *L. becki tennesseensis* p. 58 figd., Amsden (2).

†*Lissostrophia* (*Lissotrophia*) *lindenensis* p. 77 figd., Amsden; *L. (Lissotrophia) lindenensis* p. 57 figd., Amsden (2).

†*Orthostrophia strophomenoides parva* subsp. nov. p. 41 figd., Lower Devonian, U.S.A., Amsden.

†*Parastrophonella* gen. nov. type *Strophomena anaglypha* Kayser, 1871, p. 93 figd., Devonian, U.S.S.R., Bublichenko.

†*Rafinesquina* (*Playfairia*) (?) *oandensis* sp. nov. p. 50 figd., Ordovician, Esthonia, Oraspyl'd; *R. (Rafinesquina) orvikui* [Männil MS.], p. 49 figd., Ordovician, Esthonia, Oraspyl'd.

†*Strophoedonta cymbiformis, boonensis* p. 38 figd., Okubo.

†*Stropheodonta* (*Brachyprion*) *gibbera* sp. nov. p. 73 figd., *arata* p. 75 figd., Lr. Devonian, U.S.A., Amsden; *S. (Brachyprion) gibbera* p. 55 figd., *arata* p. 57 figd., Lr. Devonian, U.S.A., Amsden (2).

†*Strophonella* (*Strophonella*) *bransonii* sp. nov. p. 70 figd., Amsden; *S. (Strophonella) bransonii* p. 54 figd., Amsden (2).

ORTHOTETACEA

†*Derbyia* sp. p. 494, *D. (?)* sp. p. 495, Permian, Yugoslavia, Ramovš; *D. hardmani* p. 78 sp. nov., figd. ? sp. A p. 81, Permian, Western Australia, Thomas; *D. magnifica* p. 141 figd., Hayasaka & Minato.

Derbyoidinae subfam. nov. p. 81, of *Permorthotetes* gen. nov. p. 82, type species, *P. callytharrensensis* sp. nov. p. 84, *crepsinae* p. 89, *lindneri* p. 92, *guppyi* p. 96, *teichertii* p. 101, *camerata* p. 102, spp. nov. aff. *camerata* p. 105 sp. aff. *guppyi* p. 106 all figd., Permian, Western Australia, Thomas.

†*Geyerella* ? sp. indet p. 154, Middle Permian, Japan, Minato & Nakamura.

†*Holtedahlina sakuensis* sp. nov. p. 60, *rakverensis* [Männil MS.] p. 61 both figd., Ordovician, Esthonia, Oraspyl'd.

†*Kiangsiella pectiniformis* p. 495, aff. *pectiniformis* p. 496, Ramovš; *K. condoni* p. 68 sp. nov., cf. *condoni*, *S. p. A.* p. 73, *sp. B.* p. 74, all figd., Permian, Western Australia, Thomas.

†*Meekella gigantea* p. 323. Minato.

†*Orthotetes kaskasiensis* p. 22 figd., Abramyan.

†*Orthotetes (Schellwienella) planumbonus* p. 21 figd., Abramyan.

†*Orthotetina kayseri* p. 152, *rugosa* p. 153 figd., Minato & Nakamura.

†*Schellwienella marcidula* sp. nov. p. 90 figd., Amsden; *S. marcidula* p. 66 figd., Amsden (2); *S. umbonata* sp. nov. p. 48 figd., Mississippian, U.S.A., Sanders.

†*Schuchertella attenuata* p. 152 figd., Amsden (1); *S. haraganensis* sp. nov. p. 88 figd., Amsden; *S. haraganensis* p. 67, Amsden (2); *S. portlockiana* p. 47, Zakowa; *S. sp.* p. 47, Mississippian, U.S.A., Sanders.

†*Streptorhynchus crenistria* var. *senilis* p. 25 figd., Abramyan; *S. inaequiornatus* p. 838 figd., Amos (1); *S. pelargonatus* p. 149 figd., Minato & Nakamura; *S. plicatilis* p. 41, *crassimurus* p. 44, *variabilis* p. 47, *costatus* p. 49, *hoskingae* p. 52, *johnstonei* p. 55, spp. nov. aff. *perfidiabadensis* p. 58, *S. pelargonatus* p. 60, *luluigui* p. 62, *A. sp. nov.* sp. indet. p. 66 all figd., Permian, Western Australia, Thomas; *S. tubiphora* sp. nov. p. 328, Lower Permian, Japan, Minato (1).

Suborder OLDHAMINOIDEA

OLDHAMINACEA

†*Leptodus nobilis* p. 497 figd., Ramovš; *L. nobilis* p. 175, cf. *nobilis* p. 177, Thomas (1).

†RICHTHOFENACEA

†*Richthofenia lawrenciana* p. 534, Ramovš.

†*Teguliferina baschkirica* p. 57, *deformis* var. *orientalis* p. 58 figd., Ur. Carboniferous, USSR., Stepanov.

Suborder PRODUCTOIDEA

PRODUCTACEA

†*Buxtonia* sp. p. 22, Lapina.

†*Cancrinella multicostata* sp. nov. p. 72, *multicostata* var. *inconvexa* var. nov., *magna* sp. nov. p. 74, all figd., Lr. Permian, U.S.S.R., Solomina; *C. villiersi kozlovskiana* p. 144, *cancrinelliformis spinosa* subsp. nov. p. 144, all figd., Middle Permian, Japan, Hayasaka & Minato.

†*Daviesiella llangollensis* p. 79, Jackson.

†*Diaphragmus cestriensis* p. 47, Nelson.

†*Dictyoclostus parvus* p. 47, Nelson; *D. taiyuanfuensis* var. *tareiaensis* p. 23 figd., Lapina; *D. yangtzensis* p. 506, *D. sp. nov.*? p. 507, *metzi* sp. nov. p. 508 all figd., *richthofeni* p. 509, *callocreneus callocreneus* p. 510, *callocreneus elongatus* subsp. nov. figd., p. 511, *slovenicus* sp. nov. p. 512, *slovenicus slovenicus* subsp. nov., *slovenicus sinuosus* subsp. nov. p. 513; *D. planus* sp. nov. p. 514 figd., Permian, Jugoslavia, Ramovš.

†*Echinoconchus punctatus* p. 63, *defensus*, *elegans* p. 64, all figd., Zakowa; *biseriatus* p. 47, Nelson.

†*Eomarginifera frechi* p. 54, *acuticostata* p. 55, *sudetica* p. 56, all figd., Zakowa.

†*Gigantoproductus bisati* p. 57, *inflatus*, *latissimus* p. 58, *latissimus* var. *complicata* p. 59, fill figd., Zakowa; *G. brazerianus* p. 47, Nelson.

†*Kochiproductus saajagensis* sp. nov. p. 70 figd., Lower Permian, U.S.S.R., Solomina.

†*Linoproductus auritus* sp. nov. p. 76, Lr. Permian, U.S.S.R., Solomina; *L. continentalis* p. 60 figd., Zakowa; *L. cora* p. 145 figd., Hayasaka & Minato; *L. lineatus lineatus* p. 515 figd., *lineatus latus* subsp. nov., *cora cora*, *cora triangularis* p. 519, figd., Permian, Jugoslavia, Ramovš; *L. ex gr. neffedievi* p. 22 figd., Lapina.

†*Marginifera helica helica* figd., *helica multispinosa* p. 501, *lata*, cf. *lata* p. 502, *convoluta*, *ovalis*, *spinosa-costata* p. 503, *labaensis* p. 504, *nikchitchi* figd. p. 504, *spatiosa* p. 505, aff. *spatiosa* p. 506, Permian, Jugoslavia, Ramovš.

†*Muirwoodia vorcutensis* sp. nov. p. 78 figd., Solomina.

†*Paramarginifera kiangsiensis* p. 498, *kiangsiensis tethys* p. 499, *kiangsiensis involuta* subsp. nov. p. 499, all figd., *kiangsiensis tumida* p. 500, cf. *himalayensis* p. 501, Permian, Jugoslavia, Ramovš.

†*Plicatifera praelonga* p. 27, *niger* p. 30, both figd., Abramyan.

†*Proboscidella alpina alpina* p. 520, *alpina sinuata* subsp. nov. p. 521 figd., Permian, Jugoslavia, Ramovš.

†*Productus chonetiformis* p. 36 figd., Abramyan.

†*Pustula abbotti larga* subsp. nov. p. 864 figd., Lr. Carboniferous, N.S.W., Australia, Cvcancara; *P.* sp. p. 63, Zakowa.

†*Scacchinella* (?) *aktjubensis* sp. nov., p. 59 figd., Ur. Carboniferous U.S.S.R., Stepanov.

†*Semiproductus* gen. nov. p. 98, type *S. minax* sp. nov. p. 99 figd., Lr. Carboniferous, U.S.S.R., Bublichenko.

†*Sinuatella sinuata* p. 60 figd., Zakowa.

†*Striatifera prinadai* p. 520, Ramovš; *S. spinifera* p. 61 figd., Zakowa; *S.?* sp. p. 144 figd., Middle Permian, Japan, Hayasaka & Minato.

†*Strophalosia* (*Strophalosiella*?) *wolfcampensis* p. 55, *wolfcampensis* var. *sakmarensis* p. 56 both figd., Ur. Carboniferous, U.S.S.R., Stepanov.

†*Thomasella transversistriata* p. 62 figd., Zakowa.

†*Tschernyshevya typica typica* p. 524 figd., *typica elongata*, *typica lata*, *typica ovalis* subsp. nov. figd. p. 536, cf. *sinensis*, *yakowlewi* p. 526 figd., *sinuissima*, *involuta* p. 528, *heritschi* sp. nov. figd., p. 529; *T. rakoveci* sp. nov. p. 530, *rectangula* sp. nov. p. 532, Permian, Jugoslavia, Ramovš.

†*Waagenoconcha abichi abichi*, *abichi consors* p. 523, cf. *cylindrica*, p. 524, Ramovš; *W. obscura* sp. nov. p. 69 figd., Lr. Permian, U.S.S.R., Solomina; *W. maxima* sp. nov. p. 33 figd., Ur. Devonian, Armenia, Abramyan.

Suborder CHONETOIDEA

CHONETACEA

†*Chonetes* ex gr. *carboniferus* p. 21 figd., Lapina; *C.* cf. *chesterensis* p. 839 figd., Amos (1); *C. gloucesterensis* sp. nov. p. 866 figd., Lr. Carboniferous, N.S.W., Australia, Cvcancara; *C. granulifer* var. *semiacanthus* var. nov. p. 99 figd., Carboniferous, Western Maryland, U.S.A., Lintz; *C. woolacotti* p. 99, *kirkbyi* p. 102, both figd., Malzahn; *C.* sp. p. 92 figd., Lr. Devonian, U.S.A., Amsden.

†*Chonetes* (*Megachonetes*) *zimmermanni* p. 51 figd., Zakowa.

†*Chonetes* (*Plicochonetes*) *deplanata* p. 142 figd., Hayasaka & Minato.

†*Chonetes* (*Rugosochonetes*) *laguesianus* p. 48, *sudeticus* sp. nov. p. 49, both figd., Lr. Carboniferous, Poland, Zakowa.

†*Chonetina verneuili* var. *obscurus* var. nov. p. 102 figd., Carboniferous, Western Maryland, U.S.A., Lintz.

†*Paeckelmannia polita* p. 52 figd., Zakowa.

†*Plicochonetes geniculatus* p. 49 figd., Sanders; *P. sexfidus* sp. nov. p. 868 figd., Lr. Carboniferous, N.S.W., Australia, Cvcancara; *P. tricornis*, *waldenburgianus* p. 53 figd., Zakowa.

†*Reticulatochonetes* gen. nov. p. 96 type *R. lauta* sp. nov. p. 97, figd., Lr. Carboniferous, U.S.S.R., Bublichenko

INCERTAE SEDIS

EICHWALDIIIDAE

†*Dictyonella gibbosa* p. 150, Amsden (1).

Suborder RHYNCHONELLOIDEA

RHYNCHONELLACEA

†*Acanthothyris spinulosa* [= *Terebratula senticosa* Schlotheim] p. 153 figd., Hölder.

†*Camarotoechia chavelensis* sp. nov. p. 839 figd., Lr. Carboniferous, Argentina, Amos (1); *C. ? haraganensis* sp. nov. p. 105 figd., Lr. Devonian, U.S.A., Amsden; *C. ? haraganensis* p. 71 figd., Amsden (2); *C. pleurodon* p. 68 figd., Zakowa; *C. tethys* p. 39, figd., Okubo; *C. sp.* p. 52 figd., Sanders; "*C. ? hollandi* nom. nov. for *C. cedarensis* Amsden 1949 non Stainbrook 1942, Ur. Silurian, U.S.A., Amsden (1).

†*Catmarotoechia* [sic] [= *Camarotoechia*] *letiensis* p. 38, *baitalensis* p. 41, (?) *araratica* sp. nov. p. 43, *araratica* var. *schanamensis* var. nov. p. 46 (?) *nalivkini* sp. nov. p. 48, *panderi* p. 50, *delicatocostata* p. 53, *radiata* var. *arpaensis* var. nov. p. 55, *pleurodon* p. 58 all figd., Ur. Devonian, Armenia, Abramyan.

†*Cirpa*, type *C. primitiva* di Gregorio, discussed p. 51, *C. fronto* p. 53, *langi* sp. nov. p. 57, both figd., Lr. Lias, Gt. Britain, Ager.

†*Costellirosta singularis* p. 72, figd., Amsden (2).

†*Dorsisinus* gen. nov. p. 53, type species: *Centronella louisianensis* Weller p. 54, figd., Mississippian, U.S.A., Sanders.

†*Eutonnia medialis* p. 74, *exserta* p. 76, both figd., Amsden (2); *E. exserta* sp. nov. p. 110, figd., Lr. Devonian, U.S.A., Amsden.

†*Furcirhynchia* p. 68, genus discussed, *furcata* p. 70, *ilminsterensis* p. 73, *cotteswoldiae* p. 75, *melvillei* sp. nov. p. 74 all figd., Lias, Gt. Britain, Ager.

†*Goniorhynchia boueti* p. 992, Mitra.

Hemithyris psittacea p. 71, *psittacea woodwardii* p. 73, figd., Konzhuikova; *H. psittacea*, *psittacea woodwardii* p. 19, Ozaki.

†*Liorhynchus dichotomians* p. 63, *dichotomians* var. *assimulata* p. 64, both figd., Abramyan.

†*Nekhoroshevia* gen. nov. [near *Hypothyridina*] p. 100, type *N. altaica* sp. nov. p. 101 figd., Ur. Devonian, U.S.S.R., Northeast Kazakhstan, Bublichenko.

†*Nymphorhynchia* gen. nov. p. 53 type *N. bischofioides* sp. nov. p. 54 figd., Middle Devonian, Ukraine, U.S.S.R., Rzonisnickaja.

†*Obturamentella* gen. nov. type species *Wilsonia wadei* Dunbar 1919, p. 99, 100 figd., Lr. Devonian, U.S.A., Amsden; *O. wadei* p. 70 figd., Amsen (2).

†*Orthorhynchula bidwellensis* sp. nov. p. 69 figd., Silurian, Ontario, Canada, Bolton.

†*Pugnax pugnus* p. 69 figd., Zakowa.

†*Pugnoides triaequalis* p. 60, *channahiensis* p. 62, both figd., Abramyan.

†*Rhynchonella densleonis* p. 86, figd., *whiteana*, *suciensis* p. 87, Ur. Cretaceous, California, U.S.A., Anderson; *R. decurtata* p. 43, *trindosi* p. 45, both figd., Vialli & Vai; *R. aff. greppini* p. 46, *liasica*, *striata* p. 47, spp. nov. *plana* p. 48 sp. nov., *alberti* var. *tenuis* var. nov. p. 49, all figd., Lias, U.S.S.R., Nutzubilze; *R. lineolata*, cf. *decipiens*, ex gr. *semplicata*, ex gr. *lineolata*, *lacunosa*, *malbossi* p. 159, *malbossi* cf. *multicostata*, var. *tenuicostata*, *bzibiensis*, cf. *guerini*, cf. *contracta mutoniana* p. 160, ex gr. *lacunosa*, *cherenensis*, *cherenensis* var. *undulata*, cf. *eichwaldi*, aff. *tschernischewi*, *kvesanensis* p. 161, *coralina*, *valangiensis*, *multiformis* var. *typica*, var. *ardesica*, var. *subardesica*, var. *rotundicostata*, var. *castelanensis*, *depressa*, *nuciformis*, *gibbsiana*, aff. *gibbsiana* p. 163, *gibbsiana* var. *bedouliensis*, var. *sayni*, *lata*, *lata* var. *minor*, aff. *bertheloti* p. 164, *coralina* var. nov., *globulosa*, *laschensis*, cf. *emereci* p. 165, cf. *pecten*, *sulcata*, *sulcata* var. *rencurelensis*, *sulcata* var. *paucicostata* p. 166, Lr. Cretaceous, U.S.S.R., Eristavi; *R. sub-wilsoni*, *protecta* p. 21, *meridionalis* p. 23, Castell & De la

Concha; *R. tetraedra, variabilis*, p. 22,
Castell & De la Concha.

† "*Rhynchonella*" (*Hypothyridina*)
cuboides p. 81, **Steiner.**

† *Rhynchotrema nobilis, parva* spp.
nov. figd., Ordovician, Esthonia,
Oraspyl'd.

† *Rimirhynchia* p. 61, genus dis-
cussed. [*R. rimosiformis* Buckman =
R. anglica (Rollier)] *anglica* p. 64,
elevata p. 66, *tardata* p. 67 all figd.,
Lias, Gt. Britain, **Ager.**

† *Rudirhynchia* p. 77, genus dis-
cussed, *rudis* p. 80, *huntcliffensis*
sp. nov. p. 81, ? *fallax* p. 83, both figd.,
Lias, Gt. Britain, **Ager.**

† *Sphaerirhynchia glomerosa* sp. nov.
p. 94, *lindenensis* p. 97, Lr. Devonian,
U.S.A., **Amsden**; *S. lindenensis* p. 67,
glomerosa p. 70 figd., **Amsden** (2).

† *Stegerhynchus indianensis* p. 61,
Bolton; *S. whitii* p. 154, **Amsden** (1).

† *Trigonirhynchia acutirostella* sp.
nov. p. 104 figd., Lr. Devonian,
U.S.A., **Amsden.**

† *Tegulorhynchia doderleini* p. 19,
Ozaki.

Suborder ATRYOIDEA

ATRYPACEA

† *Anoplothea dorsosulcata* sp. nov.
p. 40 figd., Middle Devonian, Japan,
Okubo.

† *Atrypa oklahomensis* sp. nov. p.
116 figd., Lr. Devonian, U.S.A.,
Amsden; *A. oklahomensis* p. 77 figd.,
Amsden (2); *A. pauciplicata* sp. nov.
p. 39 figd., Middle Devonian, Japan,
Okubo; *A. perfimbriata, rubromitra*
p. 13, *ciliipes* p. 14, spp. nov., all
figd., Devonian, Canada, **Crickmay**;
A. tennesseensis p. 155, figd., **Amsden**
(1).

† *Atrypina hami* sp. nov. p. 115,
figd., Lr. Devonian, U.S.A., **Amsden**;
A. hami p. 77 figd., **Amsden** (2).

Australocoelia gen. nov. p. 1174
type species *A. tourteloti* sp. nov. p.
1175 figd., Lr. Devonian, South
Africa, Falkland Islands, Argentina,
Brazil, Bolivia; *polyspera* p. 1176,
palmeta, *A. ? aymara* all figd., **Boucot**
& **Gill.**

† *Coelospira virginia* sp. nov. p. 112
figd., Lr. Devonian, U.S.A., **Amsden**;
C. virginia p. 76 figd., **Amsden** (2).

† *Leptocoeliidae* fam. nov. p. 1174
for *Leptocoelia*, Lower Devonian,
Australia, **Boucot & Gill.**

Leptocoelia genus and its distribu-
tion discussed p. 1174, *flabellites*
figd., **Boucot & Gill.**

† *Lissatrypoidea* gen. nov. p. 159
type species: *Nucleospira concentrica*
Hall, emend. **Boucot & Amsden**,
Syn. Lr. *decatyrensis* **Amsden** 1949,
figd. Ur. Silurian, U.S.A., **Boucot &**
Amsden.

† *Pustulatia pustulosa* p. 1077 figd.,
Villemur & Drot.

† *Zygospira gutta* sp. nov. p. 64
figd., Ordovician, Esthonia, **Oras-**
pyl'd.

Suborder SPIRIFEROIDEA

SPIRIFERACEA

† *Ambocoelia umbonata* p. 41 figd.,
Okubo; *urei* p. 75 figd., **Zakowa.**

† *Crurithyris clannyana* p. 103 figd.,
Malzahn; *C. levicula* p. 60 figd.,
Sanders; *C. planoconvexa* p. 535,
Ramovš; *C. rozoi* p. 97 figd., **Amos.**

† *Cyrtospirifer orbelianus* p. 70,
murchisonianus p. 73, *tarbagataicus*
p. 75, *semenoi* p. 78, *pamiricus* p. 81,
semenoi var. *cardiosinusoides* var.
nov. p. 84, *verneuili* p. 85, *julii* p. 88,
C. julii var. *kadrlovensis* var. nov. p.
91, all figd., Ur. Devonian, Armenia,
Abramyan; *C. ? latior* p. 55 figd.,
Sanders; *C. leoncitensis* p. 99, figd.,
Amos.

† *Dimeglasma eurekensis* sp. nov.
p. 977 figd., Lr. Carboniferous,
Nevada, U.S.A., **Lintz & Lohr.**

† *Elytha fimbriatus* p. 42, figd.,
Okubo.

† *Eospirifer* cf. *radiatus* p. 860 figd.,
Lower Devonian, New England,
U.S.A., **Boucot & others**

† *Howellella cycloptera* p. 125 figd.,
Amsden; *H. cycloptera* p. 80 figd.,
Amsden (2).

Hananospiriferinae subfam. nov.
of *Cyrtospiriferidae* p. 17, for *Hunano-*
spirifer, Devonian, U.S.S.R., **Rez-**
nosova (1).

†*Hunanospirifer kemerovensis* sp. nov. p. 18 figd., Devonian, U.S.S.R., **Beznosova** (1).

†*Hysterolites* (*Acrospirifer*) *fallax* aff. *fallax* p. 127 figd., **Jentsch & Röder**.

†*Kozłowskiella* (*Megakozłowskiella*) *velata* sp. nov. p. 121 figd., Lr. Devonian, U.S.A., **Amsden**; *K. velata* p. 78 figd., **Amsden** (2).

†*Minatothyris* gen. nov. type species: *Spirifer euryglossus* Schnur 1851, p. 178 figd., Ur. Devonian, Germany, **Vandercammen** (4); *M. euryglossa* p. 2, *maureri* p. 7, both figd., **Vandercammen** (1).

†*Neospirifer* (?) *americanus* sp. nov. p. 26 figd., Upper Palaeozoic, U.S.S.R., **Lapina**.

†*Palaeochoristites* sp.? p. 70 figd., **Zakowa**.

†*Phricodothyris campbelli* sp. nov. p. 870, *Phricodothyris* sp. p. 872, both figd., Lr. Carboniferous, N.S.W., Australia, **Cvancara**.

†*Plectospirifer undiferus* p. 3, *simplex* p. 12, both figd., **Vandercammen** (2).

†*Reticularia cooperensis* p. 58 figd., **Sanders**; *R. punillana* sp. nov. p. 842 figd., Lr. Carboniferous, Argentina, **Amos** (1).

†*Sanguania* gen. nov. p. 841 type species *S. dorsisulcata* sp. nov. p. 842 figd., Lr. Carboniferous, Argentina, **Amos** (1).

†*Spinocyrtia* genus discussed, *S. struniana* p. 2 figd., **Vandercammen**.

†*Spirifer* cf. *baidatschensis*, *occidentalis* p. 25 figd., **Lapina**; *S. bondarevi* sp. nov. p. 20 figd., Lr. Carboniferous, U.S.S.R., **Dedok**; *S. lirellus* sp. nov. p. 873 figd., Lr. Carboniferous, N.S.W., Australia, **Cvancara**; *S. matheri*, *bifurcatus* p. 47, **Nelson**; *S. parabisulcatus* p. 71, *trigonalis* p. 72, *duplicosta* p. 74 all figd., **Zakowa**; *S. cf. speciosus* p. 42, figd., **Okubo**; *S. tornacensis* p. 65, ex. gr. *tornacensis* p. 67 both figd., serial sect., **Abramyan**; "*S.*" sp. p. 102, *chubutensis* sp. nov. p. 103, both figd., Ur. Carboniferous, Argentina, **Amos**; "*S.*" sp. p. 845 figd., **Amos** (1).

†*Tenticospirifer tychtensis* sp. nov. p. 14 figd., Lr. Carboniferous, U.S.S.R., **Beznosova**.

†*Tingella*, genus discussed p. 1, *T. concentrica* p. 2, *dereimsi* p. 9 both figd., **Vandercammen** (3).

†*Tylothyris planimedia* sp. nov. p. 876 figd., Lr. Carboniferous, N.S.W., Australia, **Cvancara**; *T. ?* sp. p. 57 figd., **Sanders**.

ATHYRACEA

†*Athyris occidentalis* p. 14 figd., Devonian, Canada, **Crickmay**; *subconcentrica* p. 22, **Castell & De la Concha**; *A. sulcifera* p. 92, *sulcifera* var. *intermedia* p. 94, *gurdoni* p. 96, *lamellosa* p. 98, **Abramyan**.

†"*Cleiothyridina*" *glenparkensis* p. 62 figd. "*C.*" sp. p. 63 figd., **Sanders**.

†*Comelicania haueri* p. 538, *vultur* figd., cf. *avis* p. 539, aff. *doryphora* p. 540, **Ramovš**.

†*Composita obesa* sp. nov. p. 61 figd., Mississippian, U.S.A., **Sanders**.

†*Nucleospira raritas* nom. nov. for *N. concentrica* **Amsden** 1951 non *concentrica* **Hall** 1857, Ur. Silurian, U.S.A., **Amsden** (1); *N. ventricosa* p. 129 figd., **Amsden**; *N. ventricosa* p. 84, **Amsden** (2).

†*Meristella atoka* p. 84 fig., *M.* sp. 2 p. 85 figd., **Amsden** (2); †*M. atoka* p. 128 figd., **Amsden** *M.* sp. p. 39, Middle Devonian, Japan, **Okubo**.

†*Spirigera concentrica* p. 22, **Castell & De la Concha**.

†*Trematospira* cf. *hippolyte* p. 136 figd., **Amsden**; *T.* sp. figd., **Amsden** (2).

†*Tetractinella trigonella* p. 49, **Vialli & Vai**.

†*Whitfieldella parvus*, *nitida* p. 61, **Bolton**.

PUNCTOSPIRACEA

†*Cyrtina burlingtonensis* p. 63 figd., **Sanders**; *C. dalmani nana* subsp. nov. p. 133 figd., Lr. Devonian, U.S.A., **Amsden**; *C. dalmani nana* p. 87, *dalmani* ? p. 88, both figd., **Amsden** (2); *C. extensa* sp. nov. p. 71 figd., Silurian, Ontario, Canada, **Bolton**; *C. heteroclyta* p. 41 figd., **Okubo**; *C. ?* sp. p. 856, **Boucot & others**.

Cyrtinopsidae fam. nov. for *Cyrtinopsis* Scupin 1896, p. 38, Middle Devonian, Germany and Belgium, Boucot.

†*Cyrtinopsis undosa* p. 39 figd., Boucot.

†*Hustedia circularis* p. 67 figd., Sanders.

†*Janiceps peracuta* p. 537, Ramovš.

†*Martinia* aff. *contracta* p. 536, Ramovš; *M. semiplana*, *semiplana lata* p. 146 figd., Hayasaka & Minato.

†*Mediospirifer* gen. nov. p. 101, type *Delthyris medialis* Hall, 1843, Devonian, U.S.S.R., Bulbichenko.

†*Mentzelia mentzelii* figd., koeveskalliensis p. 48, Vialli & Vai.

†*Punctospirifer amblys* sp. nov. p. 879 figd. Lr. Carboniferous, N.S.W., Australia, Cvancara. *P. ornatus* p. 536, Ramovš; *P. sulcifer* p. 65, *globosa* p. 67, spp. nov. figd., Mississippian, U.S.A., Sanders; *P. transversa* p. 47, Nelson.

†*Pseudosyrinx* (?) sp. p. 27 figd., Lapina.

†*Rensselaerina haraganana* p. 92 figd., Amsden (2); *R. haraganana* p. 142 figd., Amsden.

†*Rhynchospirina maxwelli* sp. nov. p. 138 figd., Lr. Devonian, U.S.A., Amsden; *R. maxwelli* p. 91 figd., Amsden (2).

†*Retzia guerangeri* p. 21, Castell & De la Concha; *R. schwageri* p. 49 figd., Vialli & Vai.

†*Septosyringothyris keideli* p. 100 figd., Amos; *S. keideli* p. 844 figd., Amos (1).

†*Spiriferellina octoplicata* p. 101 figd., Amos.

†*Spiriferina fragilis*, *fragilis depressa* subsp. nov., p. 46, *bonii* sp. nov. p. 47, all figd. Trias, Italy, Vialli & Vai; *S.* aff. *möschii* p. 45 figd. Lias, U.S.S.R., Nutzubilze; *S. ?* sp. p. 537, Ramovš.

Suborder TEREBRATULOIDEA

CENTRONELLACEA

†*Beecheria patagonica* sp. nov. p. 104 figd. Ur. Carboniferous, Argentina, Amos.; *B.* sp. p. 52 figd., Sanders.

†*Stringocephalus* sp. p. 314. New record from the Devonian of Morocco, Hollard and Drot.

TEREBRATULACEA

†*Cistella neapolitana* p. 152, Sieber.

Cnismatocentrum sakhalinensis p. 8, figd. Recent, Konzhukova.

†*Dielasmoides* sp. p. 51, figd., Sanders.

†*Diestothyris frontalis* p. 60 figd., Konzhukova.

†*Girtyella indianensis* p. 47, Nelson; *G.* sp. p. 50 figd., Sanders.

†*Glossothyris jacobi* p. 170, Eristavi.

†*Gryphus angularis*, *radiata* p. 19, Ozaki.

†*Hemitychina himalayensis* p. 488, Ramovš.

†*Naradanithyris* gen. nov. p. 2, type species; *N. kuratai* sp. nov. p. 3, *kuratai* var. *radiostrata* var. non. p. 7 figd. Middle Jurassic, Japan, Tokuyama.

†*Neumayrithyris* gen. nov. p. 120, type species; *N. torinosuensis* sp. nov. p. 122 figd. Upper Jurassic, Japan, Tokuyama (1).

†*Nipponithyris nipponensis* p. 19, Ozaki.

†*Notothyris dieneri*, *minuta* *minuta* p. 490, *minuta elongata* subsp. nov. p. 491 figd. Permian Jugoslavia, Ramovš.

†*Pygope* aff. *diphyoides* p. 168, Eristavi.

†*Terebratula biplicata* p. 166, *biplacata* var. *dutempleana*, *sella*, *praelonga*, *depressa* p. 167, *moutoniana*, aff. *moutoniana*, cf. *subrotunda*, *gagriensis* p. 168, Eristavi; *T. depressa* p. 157 figd. Lower Cretaceous, U.S.S.R., Zesashvili; *T. edwardsi*, *punctata* p. 22, *intermedia*, *phillipsi*, *submaxillata*,

davidsoni p. 23, **Castell & De la Concha**; *T. hautonensis* p. 266, **Davis & Elliott**; *T. minor* sp. nov. p. 50 figd. Lias, U.S.S.R., **Nutzubilze**; *T. perfida* p. 19 figd. Lias, Spain, **Rios et al.**; "*T.*" *anaiwensis* p. 126, *imamurai*, *nishiyamensis* p. 128, spp. nov. all figd. Ur. Jurassic, Japan, **Tokuyama** (1); "*T.*" *nishiyamensis* sp. nov. p. 7 figd. Middle Jurassic, Japan, **Tokuyama**.

†*Terebratulina* (*Coenothyris*) *vulgaris* p. 50, **Vialli & Vai**.

Terebratulina caput-serpentis p. 441, **Franzen**; *crossei* p. 17, *unguicula* p. 19, both figd., **Konzhukova**.

†*Terebratulina caputserpentis* p. 112, Miocene, Portugal, **Zbyszewski**; *T. hataii* sp. nov. [in name only], *crossei*, *honsyuensis*, *japonica*, *miurensis*, *pacifica*, *peculiaris*, *simosensis* p. 19, Pleistocene, Japan, **Ozaki**; *T. martiniana*, *biariculata* p. 169, **Eristavi**; *T. retusa* (= *caputserpentis*) p. 111, chemical test of shell, **Hyman**; *T. wardenensis* p. 258, **Davis & Elliott**.

INCERTAE SEDIS

†*Dzirulina dzirulensis* p. 170, *pericostata*, *rouchadzei* p. 171. Lr. Cretaceous, **Eristavi**.

Suborder TEREBRATELLOIDEA

TEREBRATELLACEA

Argyrotheca cuneata p. 442, **Franzen**.

Coptothyris grayi, *grayi transversa* p. 56 figd., **Konzhukova**.

†*Coptothyris grayi* p. 19, **Ozaki**.

Dallina profundis sp. nov. p. 58 figd. Recent, Far East, U.S.S.R., **Konzhukova**.

†*Dallina raphaelis*, *simosensis* p. 19, **Ozaki**.

†*Kingena djanelidzei*, aff. *djanelidzei*, *lata* p. 170, **Eristavi**; *K. occidentalis* p. 87, Ur. Cretaceous, U.S.A., **Anderson**.

†*Laqueus blandfordi*, *koshibensis*, *quadratus*, *rubellus* p. 19, **Ozaki**.

Laqueus californianus p. 111, chemical test of shell, **Hyman**; *L. californicus* p. 38 figd., *californicus convexus* subsp. nov. p. 53 figd. Recent, Far East, U.S.S.R., **Konzhukova**.

Macandrevia cranium p. 3, figd., **Elliott**; *cranium* p. 441, **Franzen**.

†*Megerlia dubitanda* p. 87. Ur. Cretaceous, U.S.A., **Anderson**.

Pumilus gen. nov. [type species not stated]. *P. antiquatus* sp. nov. p. 560 figd. Recent, **Atkins**.

Terebratalia coreanica p. 22, *coreanica coreanica* p. 27, *coreanica occidentalis* subsp. nov. p. 29, *coreanica ochotica* p. 31, *coreanica beringiana* subsp. nov. all figd. Recent, Far East, U.S.S.R., **Konzhukova**; *T. transversa* p. 111, chemical test of shell, **Hyman**.

†*Terebratalia coreanica*, *gouldi*, *kenedeyoides* p. 19, **Ozaki**.

†*Terebratella harveyi* p. 87. Ur. Cretaceous, U.S.A., **Anderson**.

†*Waldheimia celtica*, *tamarindus* p. 10 figd., **Almela & Revilla**; *W. imbricata* p. 87. Ur. Cretaceous, U.S.A., **Anderson**.

†*Zeilleria abschastica*, *tamarindus*, *gumbriensis* p. 169. Lr. Cretaceous, U.S.S.R., **Eristavi**; *Z. kotoi* sp. nov. p. 130 figd. Ur. Jurassic, Japan, **Tokuyama** (1); *Z. mutabilis* var. *dentata* var. nov. p. 50 figd. Lias, U.S.S.R., **Nutzubilze**; *Z. naradanien-sis* sp. nov. p. 9 figd. Middle Jurassic, Japan, **Tokuyama**.